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Resort

FID/MAG



USDA ■ Forest Service

forest insect & disease management methods application group

2810 Chiles Rd. ■ Davis, Ca. 95616

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NEWSLETTER

INTEGRATED PEST MANAGEMENT WORKSHOP HELD

A national workshop on Integrated Pest Management (IPM) was held in Denver, Colorado, April 22-24, to review the current status of IPM in forestry and explore new opportunities for implementation. The workshop was organized by FIDM/MAG with the FIDM staff in Region 2, Denver, handling local arrangements. Approximately 200 people attended the meeting. Participants included Forest Service personnel and representatives from 30 State Forestry agencies.

Highlights of the workshop included presentations by European Foresters, Dr. Erwin Konig of the Forstliche Versuchs-und Forschungsanstalt, Baden-Worttemberg, and Dr. Edwin Donaubaer of Forstliche Bunderversuchsanstalt, Institut fur Forstschutz, Vienna, Austria. They described current pest management practices for bark beetles, defoliators, and shelterbelt pests in southern Germany and Austria.

RIDS*POLY GEOGRAPHIC INFORMATION SYSTEM EVALUATED

An evaluation of the USDA Forest Service Geographic Information System, RIDS*POLY, located at Washington State University (WSU) was conducted during May. The purpose of this evaluation was to determine if the existing system could meet FIDM requirements as specified by the Forest Insect & Disease Information System (FIDIS). Participants included Bob Young,

FIDM/MAG; Tom Gregg, FIDM/R-6; Bob Eder, FIDM/R-1; Dan Beus and Al Stage, INT, Moscow, ID; Wally Deshane, INT, Missoula, MT; and Dave Blakeman, Eng/R-5.

System characteristics evaluated were: 1) digitizing and editing capability; 2) tabular and graphic outputs; and 3) overall system operation. Five exercises were attempted to examine the system's ability to: 1) perform map overlays; 2) combine results from adjoining maps; 3) plotting maps on mylar using different colors; 4) extract portions of a map; 5) plot the extracts at different scales; and 6) manipulate the indentifiers (polygon labels).

The Bitterroot National Forest in Montana was selected as the demonstration forest for this project. Mapping materials included the 1978 and 1979 aerial sketch map data, ownership, and ranger district boundaries. Due to the size of the Bitterroot NF two maps (Northern and Southern) were needed for each level of information.

During the project over 100 computer jobs were run. Nine source maps were input, edited and used for further analysis. Sixteen plots were produced as well as 16 map overlays. All of the batch jobs were set up using an interactive program.

During the two weeks of the project, the participants were able to document and compare the existing system and FIDIS specifications. A detailed report is being prepared.

EVALUATION OF DYES FOR SPRAY DEPOSIT ASSESSMENT

A series of dyes commonly used in food coloring are being evaluated by FIDM/MAG for use in spray deposit assessment. These are being evaluated for stability in sunlight, detectability with the Quantiment Image Analyzer, and solubility in various common carriers and diluents. Those which pass initial screening will be evaluated for compatibility with commonly used pesticides.



TRAINING OF FOREST SURVEY CREWS IN IDAHO

In order to integrate data on losses caused by insects and disease into the current Renewable Resources inventory of Idaho, Ralph Williams (FIDM, R-4) and Ken Gibson (FIDM, R-1) provided training on recognition of insects and diseases to the Intermountain Station field crews during May 1980. Subsequent evaluation of crew performance and supplementary training were carried out by Wayne Bousfield (FIDM, R-1), Oscar Dooling (FIDM, R-1), and Allan Bullard and Dave Drummond (FIDM/MAG) during July.

The RRE crews were taking a conscientious approach to plot establishment and data collection. Insect and disease assessments made by the crews prior to our evaluation were acceptable and crew members showed substantial interest in reinforcing information given them about the insect and disease problems they might encounter during the summer.

Patti Kenney and Chris Cunningham evaluate a series of dyes for spray deposit assessment.

INTERACTIVE VERSION OF THE DOUGLAS-FIR
TUSSOCK MOTH MODEL IS COMPLETED

PESTICIDE SAFETY GUIDELINES PUBLICATION
FINALIZED

An interactive program has been developed to assist users in locating input files required to make simulations with the Douglas-fir Tussock Moth Stand-Outbreak Model. This "user friendly" program has been installed at the Ft. Collins Computer Center and is designed for use by field entomologists and technicians with a minimum of computer training. There are three available program options. Each perform a unique task. Depending on the user's needs, one or more options may be exercised prior to making a simulation. An example of how one of these options works is illustrated below. A report documenting system access and use is in preparation. For further information about this program, contact John Wong, FIDM/MAG.

The FIDM publication entitled "Pesticide Safety--Guidelines for Personnel Protection" is in press. Jack Barry, Project Officer, and committee members Patti Kenney, Dennis Hamel, Tom Hofacker, Roger Sandquist, and Brian Sturgess gave their final approval to the manuscript. This publication was written, under contract, by James Singer, a free lance scientific writer from Galt, CA. The publication will be available for distribution later this year.

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S2K N V - ,S2000.80-00003 (@INFO)MONDAY 03:13
>@ASG,A DFIM*UTILITYI.
READY
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DFIM OUTBREAK MODEL DATA PREPARATION UTILITY
VERSION 01 001 COMPILED 6/3/80

PROGRAM OPTIONS:  1= IC AND PARAMETERS FILE GENERATION
                  2= SPECTAB4 FILE GENERATION.
                  3= CONTROL MORTALITY ALGORITHM
ENTER OPTION DESIRED
>3
CONTROL MORTALITY ALGORITHM

ENTER OPTION CODE
DAY=DAILY CONTROL MORTALITY
PUP=PUPAL CONTROL MORTALITY
GVW=OVERWINTER CONTROL MORTALITY
TER=TERMINATE PROGRAM
>DAY
ENTER PHASE
>3
ENTER INSTAR
>2
ENTER TREE (YF=DOUGLAS FIR,GF=GRAND FIR)
>DF
NATURAL DAILY MORTALITIES.
PREDATOR/PARASITE= .002 DISEASE= .003 BACKGROUND= .020 STRESS= .600
CHANGE ANY NATURAL MORTALITIES?(YES/NO)
>NO
ENTER NUMBER OF DAYS STRESS OPERATES
>0
ENTER BEGINNING INSECT COUNT
>200
ENDING INSECT COUNT WITH NATURAL MORTALITY ONLY= 155.4
ENTER ENDING COUNT WITH CONTROL
>15
DAILY CONTROL MORTALITY= .2065
ENTER OPTION
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ROUTINE TERMINATED
CONTROL MORTALITY ALGORITHM COMPLETED
***GOODBYE***
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WESTERN SPRUCE BUDWORM EGG MASS SURVEYS

Analysis of three years of egg mass-defoliation data is complete and predictive evaluations have been developed using three approaches:

- Combining all data to develop a single westwide equation.
- Developing single equations for each Region.
- Developing a family of equations for each Region based on egg mass density and age of the infestation.

The Westwide or the single Regional equations will allow correct prediction into one of four defoliation categories about 60 percent of the time. However, when the age of the infestation is known probability of correct prediction increases to 85 percent.

Analysis pointed out a problem in the 4 class defoliation rating system. Due to the definitions of the four classes, it is impossible to predict into Category 1. As a result, we recommend that an "0" Category be added to indicate no defoliation for future system refinements. Using this system, Category 1 will now indicate defoliation from a trace to 25 percent. We feel that this change and subsequent modification of the prediction equations will make them more reflective of the actual situation.

Analysis is continuing on a study funded by the CANUSA-West Spruce budworms research and development program to determine the effect of physical attribute data on predictability.

FORESTRY IN AUSTRIA--A BRIEF LOOK AT INTENSIVE FOREST PEST MANAGEMENT

Following attendance at the 14th meeting of the International Society of Photogrammetry in Hamburg, West Germany, Bill Ciesla spent several days with Drs. Edwin Donaubauer and Heinrich Schmutzenhofer of the Forstliche Bundesversuchsanstalt, Institut für Forstschutz in Vienna, Austria, viewing integrated forest pest management practices.

Austria is approximately the size of Pennsylvania and is 44 percent forested. Sufficient timber is grown to provide for its own needs with a surplus available for export. Approximately 20 percent of the forest land is under Federal or State ownership; 50 percent is in farm forests and small woodlots; and the remainder is in large private ownerships. Among the larger owners of forest land are the Roman Catholic monasteries which occur throughout the country.

Forests are intensively managed. All forest land owners with more than 1500 hectares are required to employ a forester. There is an average of 30 meters of road per hectare of forest land which provides for ready surveillance and monitoring of pest populations. Pheromone traps are used to monitor populations of Ips typographus and the nun moth, a close relative of the gypsy moth which defoliates Norway spruce. Spray strategies using synthetic pyrethroids are being developed for a tent-making sawfly, Cephalcia abietis, another defoliator of Norway spruce. In addition, there is an extensive program of monitoring and managing pests in hybrid poplar shelterbelt plantations in the Hungarian Plateau, a semi-arid region in the southeastern portion of the country which since World War II has been converted to truck crops and vineyards. Shelterbelts are a key means of protecting soil in these areas from wind erosion.



Beech forests in the Vienna woods are harvested using progressive clear-cuts to remove mature stands and provide for regeneration.

Dr. Edwin Donaubaauer describes one of several pheromone traps used for monitoring populations of the spruce bark beetle Ips typographus



CONTROL OF SEED ORCHARD PESTS

Jack Barry provided technical assistance to the Southeastern Area FIDM Staff on two pilot projects involving aerial application of Pydrin and Guthion in seed orchards. Application sites were the Louisiana Forestry Commission Seed Orchard in DeRitter, Louisiana, and the Weyerhaeuser Orchard in Washington, North Carolina. Assistance included selection of spray aircraft and techniques, spray characterization, and spray deposit sampling. Preliminary results indicate that these two chemicals applied by air provided a high degree of protection. These projects will be completed this year and reported on.



Steve Dianis, Weyerhaeuser orchard manager at Washington, North Carolina, met with Jack Barry (left) and Larry Barber (right) to discuss aerial application strategy in the Weyerhaeuser Seed Orchard.



Most cones of the southern pines are located in the upper 1/3 of the crown. Their orientation and location make them ideal targets for spraying from the top down as compared to the method of spraying from the ground up with conventional orchard sprayers.

MAG STAFF ACTIVITIES

Patricia S. White has joined the FIDM/MAG staff as a Computer Specialist. Tricia earned degrees from San Francisco State University, where she did graduate work in microbiology. She comes to MAG from the USDA Food and Nutrition Service where she was a Computer Analyst. Her assignments will include the management of all in-house computer operations and provide programming support to staff specialists both at MAG and in the field. Welcome aboard Tricia.

Chris Cunningham, a UCD engineering student, has joined the MAG staff for the summer. He is assisting in analysis of insect and disease loss data, spray deposit assessment, and control of insects in seed orchard data.

Jack Barry has been appointed to serve as a member of an Aerial Application Task Force sponsored by the Council for Agricultural and Science Technology (CAST). The task force will prepare a report in response to the Friends of the Earth's petition (Federal Register Vol. 45, p. 3316 by the EPA).

Julie Hart, Editorial Assistant, has accepted a job as Secretary for the Cooperative Forestry and Fire Staff, State and Private Forestry in Region 5, San Francisco.

Bill Klein has accepted a nine-month Intergovernmental Personnel Act assignment to teach photogrammetry at the School of Forestry at Stephen F. Austin University in Nacogdoches, Texas. He will fill in for Garland Mason who is temporarily assigned to the new expanded southern pine bark beetle R&D program.

Bill Ciesla presented a paper entitled "Putting Remote Sensing Technology to Work in Forest Damage Evaluation" at the 14th meeting of the International Society of Photogrammetry in Hamburg, West Germany.



Tricia White

Bill Ciesla has been appointed to lead a special task force to recommend an expanded Integrated Forest Pest Management program for the California Department of Forestry. The goal of this program is to reduce current losses in California's forests by 50 percent by the year 2000.

PUBLICATIONS

Barry, J.W., I. Millers, and E. Richardson. 1980. Spray characterization trials for the 1979 Maine spruce budworm control program. USDA-For. Serv., FIDM/MAG, Davis, CA. Rpt. No 80-4.

Bullard, A.T. and R.W. Young. 1980. Prediction of western spruce budworm defoliation of Douglas-fir. USDA-For. Serv., FIDM/MAG, Davis, CA. Rpt. No. 80-10

Ciesla, W. M. 1980. Putting remote sensing technology to work in forest damage evaluation. International Archives of Photogrammetry, XXIII B7: 151-160.

Ciesla, W.M. 1980. Operational remote sensing for forest insect and disease management - some challenges and opportunities. Proceedings, Symposium on Remote Sensing, Univ. Idaho, Moscow. Sept. 1979; pp 36-42.

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Wong, J. 1980. An analytical approach for defining optimum sample size for spray deposit assessment. USDA For. Serv., FIDM/MAG, Davis, Ca. Rpt. No. 80-7.



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